

CLAIM REJECTIONS

35 U.S.C. § 112

On page 3 of the Office Acton, the Examiner rejects Claims 1 - 26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the Examiner asserts that Claims 1 - 26 are incomplete for omitting essential elements. The Examiner asserts that the omitted elements are "means of generating laser emission in the structures." The Applicant respectfully disagrees that essential elements are omitted from the claims.

The Applicant respectfully reminds the Examiner of the Patent Office's rules and instructions regarding the avoidance of piecemeal examination. See 37 C.F.R. 1.104(a)(1) and MPEP 707.07(g). Specifically, 37 C.F.R. 1.104(a)(1) states, in part, "the examination shall be complete with respect both to compliance of the application or patent under reexamination with the applicable statutes and rules and to the patentability of the invention as claimed, as well as with respect to matters of form." The Applicant notes that this is a second non-final Office Action for this application and Claims 1 - 8 and 10 - 23 remain unamended. This rejection, if appropriate, should have been made in the first Office Acton for this application. Therefore, the Applicant submits that the Examiner is engaging in improper piecemeal prosecution.

The Applicant further submits that the Examiner has not sufficiently set forth a basis for rejecting Claims 1 - 26 under 35 U.S.C. 112, second paragraph. First, when making a rejection under 35 U.S.C. 112, second paragraph, the Examiner "should further explain whether the rejection is based on indefiniteness or on the failure to claim what the applicants regard as their invention." MPEP 2171, citing *Ex parte Ionescu*, 222 USPQ 537, 539 (Bd. App. 1984). The Applicant submits that in stating that Claims 1-26 are "indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention," the Examiner has not adequately explained the specific basis for the rejection, i. e., indefiniteness or failure to claim.

Second, the Applicant submits that the Examiner has not followed the guidelines for rejecting claims under 35 U.S.C. 112, second paragraph, as set forth in MPEP 2172.01 and cited by the Examiner. As explained in MPEP 2172.01, a rejection under 35 U.S.C. 112, second paragraph, requires that it be shown that the rejected claim “fails to interrelate essential elements of the invention as defined by applicant(s) in the specification.” The Examiner has not asserted that there is a failure to interrelate essential elements. Instead, the Examiner has alleged that essential elements are omitted. Under the Patent Office’s own guidelines, as set forth in MPEP 2172.01, a rejection under 35 U.S.C. 112, second paragraph, must be based upon a failure to interrelate essential elements, not upon an alleged omission of essential elements.

Finally, MPEP 2172.01 requires that the essential elements be “defined by applicant(s) in the specification.” (underlining added for emphasis). The Examiner has not cited any portion in the specification at which “means of generating laser emission in the structures” is defined as an essential element. As described in MPEP 2172.01, essential matter includes that matter “described by applicant(s) as necessary to practice the invention.” The Applicant submits that the Examiner has concluded *sua sponte* that “means of generating laser emission in the structures” is necessary. However, the finding that an element is essential must be based upon the Applicant’s disclosure, not on the Examiner’s unsupported conclusion.

As described in MPEP 2171, the requirements for patentability set forth in 35 U.S.C. 112, second paragraph, are (1) the claims set forth the subject matter that the applicant regards as his invention and (2) the scope of the claim is clear to a hypothetical person possessing the ordinary skill in the pertinent art. The Applicant submits that Claims 1 - 26 meet these requirements. Therefore, the Applicant respectfully requests that the Examiner withdraw the rejection of Claims 1-26 based on 35 U.S.C. 112, second paragraph. If the Examiner maintains this rejection, the Applicant respectfully requests that the Examiner explain in more detail how such a rejection is supported by the statute, the rules, case law, and the Patent Office’s guidelines as set forth in the MPEP and provide specific citations to the Applicant’s specification, where appropriate.

Claim Rejections - 35 U.S.C. §102

The Applicant again notes that this is a second non-final Office Action and Claims 1- 8 have not been amended, since being originally filed. The Applicant further notes that the two references cited by the Examiner in the rejection of the claims under 35 U.S.C. 102(b) were available to the Examiner at the time of the previous Office Action. The Applicant again respectfully reminds the Examiner of the Patent Office's rules and instructions regarding the avoidance of piecemeal examination. Citation of these two references in this second non-final Office Action, when these two references were available to the Examiner at the time of the previous Office Action, gives the appearance of improper piecemeal prosecution.

Based on Shipman Jr. et al. (US 4,665,526)

The Examiner rejects claims 1-3, 6, 9, 11, 13, and 15 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,665,526 to Shipman et al. As stated in MPEP 2131.01, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," quoting *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Applicant submits that the Examiner has not shown that Shipman teaches each and every element as set forth in the rejected claims.

Claim 1

The Examiner asserts that Shipman discloses "means 10, 12, 14, 16, 18, 20 for applying a uniform electric field in a direction perpendicular to the propagation of laser light and having the same intensity at any one point in time along the length of the cavity." Specifically, Claim 1 recites, in part, "said electric field propagating in a direction substantially perpendicular to the propagation of laser light within the laser cavity and having substantially the same intensity along the length dimension of the laser cavity at any one point in time." The Applicant submits that Shipman does not disclose a uniform electric field as set forth in Claim 1. The Examiner has not cited any specific portion of Shipman that discloses the electric field generated by means 10, 12, 14, 16, 18 and 20 as being a uniform electric field. Means 10, 12, 14, 16, 18 and 20 when described in respect to Fig. 1 are described as providing "electric field shaping for the discharge

region to accomplish the aims of the invention.” See col. 5, lines 3-5. However, Shipman does not describe the desired electric field shaping for the device depicted in Fig. 1. Therefore, one skilled in the art can not conclude that Shipman discloses “said electric field propagating in a direction substantially perpendicular to the propagation of laser light within the laser cavity and having substantially the same intensity along the length dimension of the laser cavity at any one point in time,” as recited in Claim 1, solely based on the description Shipman provides for Fig. 1

Shipman does describe the electric field seen for the embodiment of the invention depicted in Fig. 2. However, Shipman discloses that the “electric field intensity near lateral electrode edges is actually lower than elsewhere in the field and that field intensity is highest midway between electrodes 40 and 42.” See col. 6, lines 9 - 12. Shipman further describes that “this is an optimum field condition favoring a discharge free of deleterious wall tracking when discharge is initiated by applying a voltage difference across electrodes 40, 42.” Therefore, Shipman does not disclose a uniform electric field, but, instead, an electric field which varies between the electrodes. Specifically, the Applicant submits that Shipman does not teach, disclose or suggest “said electric field propagating in a direction substantially perpendicular to the propagation of laser light within the laser cavity and having substantially the same intensity along the length dimension of the laser cavity at any one point in time,” as recited in Claim 1.

The Applicant further notes that Fig. 3 shows a electric field intensity similar to that of Fig. 2. That is, Fig. 3 shows that the electric field has a greater intensity at a point midway between the electrodes 70, 72 and a lower intensity near the electrodes 70, 72. Therefore, the Applicant submits that Fig. 3 and its related text does not teach, disclose, or suggest each and every element as set forth in Claim 1.

The Applicant submits that the Examiner has not shown that Shipman teaches each and every element as set forth in Claim 1. If the Examiner disagrees, he is respectfully requested to specifically point out and clearly explain where Shipman discloses all the elements as set forth in Claim 1. Otherwise, the Applicant requests that the rejection of Claim 1 based on Shipman be withdrawn.

Claims 2, 3 and 6

The Applicant submits that the Examiner has not shown that Claims 2, 3 and 6 are anticipated by Shipman, since these claims depend, either directly or indirectly, on Claim 1 and, as discussed above, the Examiner has not shown anticipation of Claim 1 by Shipman. Therefore, the Applicant requests that the Examiner also withdraw the rejection of Claims 2, 3 and 6 based on Shipman.

Claim 9

Claim 9 recites, in part, “applying the electrical signal to said laser cavity to produce an electric field uniformly and simultaneously changing the index of refraction along the length of the laser cavity in proportion to the amplitude of the electrical signal.” As discussed above in regard to Claim 1, the Applicant submits that Shipman does not disclose a uniform electric field. Instead, Shipman discloses an electric field that varies between the electrodes.

Further, the Examiner has not cited any portion of Shipman that discloses an electric field that changes an index of refraction within the laser cavity. Shipman discloses the use of electrodes to provide a discharge region for a gas laser. Essentially, the electrodes provide the “spark” to excite the gas laser into a lasing condition. Therefore, the Examiner has not shown that Shipman discloses “simultaneously changing the index of refraction along the length of the laser cavity in proportion to the amplitude of the electrical signal” as recited in Claim 9.

The Applicant submits that the Examiner has not shown that Shipman teaches each and every element as set forth in Claim 9. If the Examiner disagrees, he is respectfully requested to specifically point out and clearly explain where Shipman discloses all the elements as set forth in Claim 9. Otherwise, the Applicant requests that the Examiner withdraw the rejection of Claim 9 based upon Shipman.

Claims 11 and 13

The Applicant submits that the Examiner has not shown that Claims 11 and 13 are anticipated by Shipman, since these claims depend, either directly or indirectly, on Claim 9 and, as discussed

above, the Examiner has not shown anticipation of Claim 9 by Shipman. Therefore, the Applicant requests that the Examiner also withdraw the rejection of Claims 11 and 13 based on Shipman.

Claim 15

Claim 15 recites, in part, that “the electrical signal is a radio frequency signal.” The Applicant submits that the Examiner has not shown where Shipman teaches that “the electrical signal is a radio frequency signal,” as recited in Claim 15. Therefore, the Applicant submits that the Examiner has not shown that Shipman teaches each and every element set forth in Claim 15. If the Examiner disagrees, he is respectfully requested to specifically point out and clearly explain where Shipman discloses all the elements as set forth in Claim 15. Otherwise, the Applicant requests that the Examiner withdraw the rejection of Claim 15 based upon Shipman.

Based on Hundstad

The Examiner rejects claims 1, 6, 9, 11, and 13 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,064,465 to Hundstad et al. The Applicant submits that the Examiner has not shown that Hundstad teaches each and every element as set forth in the rejected claims.

The Examiner asserts that Hundstad discloses the invention at Fig. 2A and the discussion related to that figure. Specifically, the Examiner asserts that Hundstad discloses “means 58, 56 for applying a uniform electric field in a direction perpendicular to the direction of propagation of laser light and having the same intensity at any one point along the length of the cavity.” However, “means 58, 56” are described in Hundstad as “insulating wall portions 56 and 58.” See col. 3, line 56. Insulating wall portions 56 and 58 clearly can not act as “means for applying a uniform electric field.” Therefore, the Applicant submits that the Examiner has not shown in the Office Action how Hundstad teaches each and every element as set forth in the rejected claims.

The Examiner may have intended to cite electrodes 46 and 48 in Hundstad as “means for applying a uniform electric field.” If so, the Applicant still contends that the Examiner has not shown how Hundstad teaches each and every element as set forth in the rejected claims.

Claim 1

Claim 1 recites, in part, “means for applying a uniform electric field across said laser cavity, said electric field propagating in a direction substantially perpendicular to the direction of propagation of laser light within the laser cavity and having substantially the same intensity along the length dimension of the laser cavity at any one point in time.” The Examiner has not pointed out any portion of Hundstad that discloses that an electric field generated by electrodes 46, 48, means 56, 58, or any other element disclosed in Hundstad is a uniform electric field “having substantially the same intensity along the length dimension of the laser cavity at any one point in time.” The Examiner is reminded that, under 37 C.F.R. 1.104(c)(2), “particular part relied on must be designated as nearly as practicable.” The Applicant submits that the Examiner has not done so in the rejection of Claim 1. Therefore, the Applicant submits that the Examiner has not shown that Hundstad teaches each and every element set forth in Claim 1. If the Examiner disagrees, he is respectfully requested to specifically point out and clearly explain where Hundstad discloses all the elements as set forth in Claim 1. Otherwise, the Applicant requests that the Examiner withdraw the rejection of Claim 1 based upon Hundstad.

Claim 6

The Applicant submits that the Examiner has not shown that Claim 6 is anticipated by Hundstad, since this claim directly depends on Claim 1 and, as discussed above, the Examiner has not shown anticipation of Claim 1 by Hundstad. Therefore, the Applicant requests that the Examiner also withdraw the rejection of Claim 6 based on Hundstad.

Claim 9

Claim 9 recites the text “maintaining the lasing condition with energy applied to a gain medium within said laser cavity ... applying the electrical signal to said laser cavity to produce an electric field uniformly and simultaneously changing the index of refraction along the length of the laser cavity in proportion to the amplitude of the electrical signal; and transmitting the laser light out of the laser cavity to provide a frequency-modulated laser light signal.”

Fig. 2A and the discussion thereof in Hundstad discusses a gas laser system. The Examiner in the Official Action asserts that Hundstad discloses “means 58, 56 for applying a uniform electric field ...” As discussed above, the Applicant submits that means 58, 56 of Hundstad do not apply any sort of electric field. The Applicant further submits that the Examiner has not shown how any element of Hundstad “produces an electric field uniformly and simultaneously changing the index of refraction along the length of the laser cavity in proportion to the amplitude of the electric signal” as recited in Claim 9. Further, the Applicant submits that the Examiner has not shown where Hundstad discloses the step of “transmitting the laser light out of the laser cavity to provide a frequency-modulated laser light signal” as recited in Claim 9.

Therefore, the Applicant submits that the Examiner has not shown that Hundstad teaches each and every element set forth in Claim 9. If the Examiner disagrees, he is respectfully requested to specifically point out and clearly explain where Hundstad discloses all the elements as set forth in Claim 9. Otherwise, the Applicant requests that the Examiner withdraw the rejection of Claim 9 based upon Hundstad.

Claims 11 and 13

The Applicant submits that the Examiner has not shown that Claims 11 and 13 are anticipated by Hundstad, since these claims depend, either directly or indirectly, on Claim 9 and, as discussed above, the Examiner has not shown anticipation of Claim 9 by Hundstad. Therefore, the Applicant requests that the Examiner also withdraw the rejection of Claims 11 and 13 based on Hundstad.

Claim Rejections - 35 U.S.C. 103(a)

The Examiner rejects Claims 4, 5, 7-8, 10, 12, 14, 16, 17, 18, 19, and 20-26 under 35 U.S.C. 103(a) as being made obvious by one or more cited references, either alone, or in combination with other cited references or Admitted Prior Art. The Applicant submits that since these claims depend, either directly or indirectly, upon the independent claims discussed above and the Examiner has not shown that each and every element of the independent claims is taught by cited references, the Examiner has not shown that the dependent claims are made obvious by the cited

references. Therefore, the Applicant requests that the Examiner withdraw the rejection of these claims under 35 U.S.C. 103(a).

The Applicant further submits that the Examiner has not established a *prima facie* case of obviousness for the claims rejected under 35 U.S.C. 103(a). The Applicant notes:

“To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.” *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Applicant submits that a *prima facie* case of obviousness has not been established for the reasons set forth below.

Claims 4 and 16 based on Shipman in view of Donon

The Examiner rejects Claims 4 and 16 under 35 U.S.C. 103(a) as being unpatentable over Shipman in view of Donon (U.S. 4,258,335). The Examiner asserts that “transmission lines provide good excitation and may replace the electrodes of Shipman and Donon.” The Applicant notes that the Examiner has not provided any specific support for the assertion that “transmission lines provide good excitation.” The Applicant submits that this bare assertion, without specific support in the references or a specific citation to knowledge generally available to one skilled in the art is insufficient to combine the references in the manner done by the Examiner.

Further, the Applicant notes that Claims 4 and 16 recite, in part, “wherein said traveling wave structure comprises a transmission line having a first line and a second line, wherein the laser cavity is disposed between the first line and the second line, the first line and the second line having widths greater than or equal to the length dimension of the laser cavity.” Shipman discloses a structure which has “two pairs of contoured metal sheets arranged symmetrically about orthogonal planes of a discharge device,” (see Shipman abstract) while Donon discloses a flat plat transmission line formed by an insulating plate 7 placed between a first metal plate

divided into two distinct portions 2, 3 and a second metal plate 7 (see Donon, col. 2, lines 14 - 28). Hence, Donon discloses a gap in the first metal plate, while Shipman does not disclose such a gap. Therefore, one skilled in the art would not be motivated to combine the references in the manner done by the Examiner, due to the radically different structures disclosed in the references. Further, one skilled in the art would not be motivated to combine the references to arrive at the features recited in Claims 4 and 16. Therefore, the Applicant submits that the Examiner has not established a prima facie case of obviousness based on the combination of Shipman and Donon and respectfully requests that the rejection of Claims 4 and 16 on this basis be withdrawn.

Claims 5, 7-8, 10, 12, 14 and 17 based on Shipman or Hundstad

The Examiner rejects Claims 5, 7-8, 10, 12, 14 and 17 under 35 U.S.C. 103(a) as being unpatentable over Shipman or Hundstad. The Examiner admits that the features recited in these claims are not disclosed in either of the cited references, but appears to assert that the teachings of Shipman or Hundstad can be modified to arrive at these features based solely on knowledge generally available to one of ordinary skill in the art. The Applicant again asserts that the Examiner has not shown that Shipman or Hundstad disclose each and every element as set forth in the independent claims, so the sole reliance on these references for the rejection of Claims 5, 7-8, 10, 12, 14 and 17 is improper.

The Applicant also submits that the rejection of Claims 5, 7-8, 10, 12, 14 and 17 under 35 U.S.C. 103(a) based on Shipman or Hundstad is improper because the proposed modifications either render the cited prior art unsatisfactory for its intended purpose and/or change the principle of operation of the cited prior art. As stated in MPEP 2143.01, in the "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Further, "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious." *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The individual claims are addressed in additional detail below.

Claims 5 and 10

Claim 5 recites, in part, wherein the laser cavity comprises a laser cavity in a laser semiconductor structure.” Claim 10 recites a similar feature. The Examiner proposes to modify the teachings of Shipman or Hundstad to include a semiconductor cavity because “semiconductors provide effective lasing characteristics.”

The Examiner appears to have overlooked the fact that the invention disclosed in Shipman “relates to transverse discharge devices”. See col. 1, line 7. Shipman further describes the use of discharge devices in excimer gas lasers. See col. 1, line 9. The disclosure of Shipman appears to only describe the use of the described discharge device with gas lasers. The Applicant submits that Shipman contains no disclosure to suggest that the gas laser apparatus described therein could be replaced with a semiconductor cavity. Shipman further describes the application of high voltages (up to 100 KeV) to the electrodes and excitation of the gas in the laser with an e-beam X-ray generator 148. See col. 7, lines 45 - 65. Using a semiconductor laser cavity in this embodiment will, most likely, result in an apparatus that does not produce laser light, but, instead, will result in an inoperative apparatus due to the destruction of the laser cavity in the presence of the high voltage and X-rays.

Similarly, Hundstad discloses an invention related to high pressure pulse gas laser systems which require discharge initiation and gas flow. See col. 1, lines 9 - 11. Hence, there is no indication in Hundstad that the disclosed laser cavity can be replaced with “a laser cavity in a laser semiconductor structure” as recited in Claim 5. Even if such a replacement could be made, the resulting device would no longer be a gas laser, it would be a semiconductor laser. Clearly, such a modification would change the principle of operation of the apparatus disclosed in Hundstad.

Therefore, the Applicant submits that the Examiner has not established a *prima facie* case of obviousness for Claims 5 and 10, since there would be no motivation to modify the references in the manner done by the Examiner.

Claims 7 and 14

Claim 7 recites, in part, “wherein said laser cavity comprises doped lithium niobate.” Claim 14 recites a similar feature. As discussed above, both Shipman and Hundstad disclose gas lasers. Hence, the modification of the apparatus disclosed in those references would suggest the use of a gaseous form of lithium niobate. The Examiner has not provided any reference that indicates that a gaseous form of lithium niobate may be used in gas lasers. If a solid form of lithium niobate is to be used, the apparatus disclosed by Shipman or Hundstad would then be modified to no longer be a gas laser. For the reasons discussed above, such a modification would either render the modified apparatus unsatisfactory for their intended purposes or change the principle of operation. Therefore, the Applicant submits that the Examiner has not established a *prima facie* case of obviousness for Claims 7 and 14, since there would be no motivation to modify the references in the manner done by the Examiner.

Claims 8 and 17

Claim 8 recites, in part, wherein “said laser cavity has an index grating” and “said uniform electric field changing the dielectric constant of said index grating.” Claim 17 recites similar features. The Examiner asserts that “it would have been obvious to one skilled in the art to include an index grating so that one may change the wavelength of the emitted light.” However, the Examiner has provided no citation to show that an indexed grating may even be used in the gas lasers disclosed in Shipman or Hundstad. Further, the Examiner has not shown that a change in the wavelength of the emitted light is a desired feature for the gas lasers disclosed in Shipman or Hundstad. Further, the Examiner has not shown how Shipman or Hundstad teaches, disclose, or suggests the feature of “said uniform electric field changing the dielectric constant of said index grating.” Therefore, the Applicant submits that the Examiner has not established a *prima facie* case of obviousness for Claims 8 and 17, since there would be no motivation to modify the references in the manner done by the Examiner, nor has the Examiner shown how every feature set forth in Claims 8 and 17 is taught or suggested by the cited references.

Claim 12

Claim 12 recites, in part, “applying light energy at one end of said laser cavity.” The Examiner states that “it would have been obvious to one skilled in the art to end pump the laser medium as a matter of obvious design choice, as side (sic) pumping provides an effective means of pumping a laser, as is well known.” Presumably, the Examiner meant to refer to end pumping. However, the Examiner has not provided any support for his assertion that end pumping of a gas laser is well-known. The Examiner concedes that Shipman and Hundstad do not teach end pumping. However, if end pumping of a gas laser is well known, the Examiner should be able to provide a reference that provides such a teaching. Otherwise, the Applicant submits that the Examiner has not established a *prima facie* case of obviousness for Claim 12, since the Examiner has not established the motivation to modify the references in the manner done by the Examiner, nor has the Examiner shown how every feature set forth in Claim 12 is taught or suggested by the cited references.

Claims 18 and 20 - 26 based on Shipman in view of the APA

The Examiner rejects claims 18 and 20-26 under 35 U.S.C. 103(a) as being unpatentable over Shipman in view of the Admitted Prior Art (APA). As discussed above, Shipman is related to the art of gas lasers, while the admitted prior art (APA) cited by the Examiner relates to semiconductor laser structures. As discussed in detail above, the modification of the gas laser structures disclosed in Shipman with semiconductor laser structures would result in rendering Shipman unsatisfactory for its intended purpose or change the principle of operation of Shipman. Therefore, the Applicant submits that the Examiner not established a *prima facie* case of obviousness for Claims 18 and 20 - 26, since the Examiner has not established the motivation to modify the Shipman with the teachings of the APA.

Additional reasons as to why the Examiner’s rejection of Claims 18 and 20 - 26 under 35 U.S.C. 103(a) based on Shipman in view of the APA are presented below.

Claims 18 and 24

The Examiner asserts that Shipman discloses the limitations of claims 18 and 24 except the coincident gain and phase regions. The APA shows that longitudinally coincident gain and phase regions are known for semiconductor laser systems, but the Examiner has not shown that such regions are known for the gas laser systems disclosed in Shipman. If gas laser systems are known to have such structures, the Applicant respectfully requests that the Examiner cite a reference that provides such a disclosure. Otherwise, the Applicant submits that the Examiner not established a *prima facie* case of obviousness for Claims 18 and 24, since the Examiner has again not established the motivation to modify the Shipman with the teachings of the APA.

Claim 21

See the discussion above for Claims 5 and 10.

Claim 23

See the discussion above for Claims 8 and 17

Claim 19 based on Shipman and the APA in view of Laakmaan

The Examiner rejects Claim 19 under 35 U.S.C. 103(a) as being unpatentable over Shipman and APA in view of Laakmaan (U.S. 5,602,886). The Applicant submits that since Claim 19 depends on Claim 18, the Examiner has not established a *prima facie* case of obviousness for Claim 19, based on the arguments set forth above for Claim 18.

The Applicant further submits that one skilled in the art would not be motivated to combine Shipman, the APA, and Laakmaan in the manner done by the Examiner. Both Shipman and Laakmaan disclose gas laser systems, while the APA is directed at semiconductor lasers. As discussed above in detail, one skilled in the art would not be motivated to combine the art of gas lasers with that of semiconductor lasers. Hence, the Applicant submits that the Examiner not established a *prima facie* case of obviousness for Claim 19, since the Examiner has not established the motivation to modify the Shipman and the APA with the teachings of Laakmaan.

Conclusion

Hence, the Applicant respectfully submits that the Examiner has not shown that the claims of the application are anticipated or made obvious by the cited references. In view of the above, reconsideration and allowance of the pending claims are respectfully solicited.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on


Respectfully submitted,

June 11, 2003

(Date of Deposit)

Ross A. Schmitt

(Name of Person Transmitting)


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6-11-2003

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